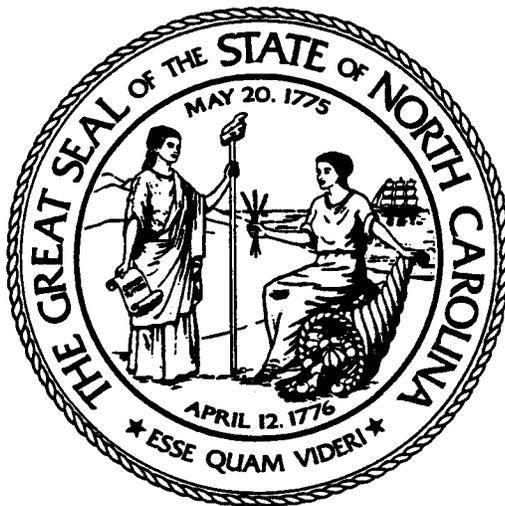
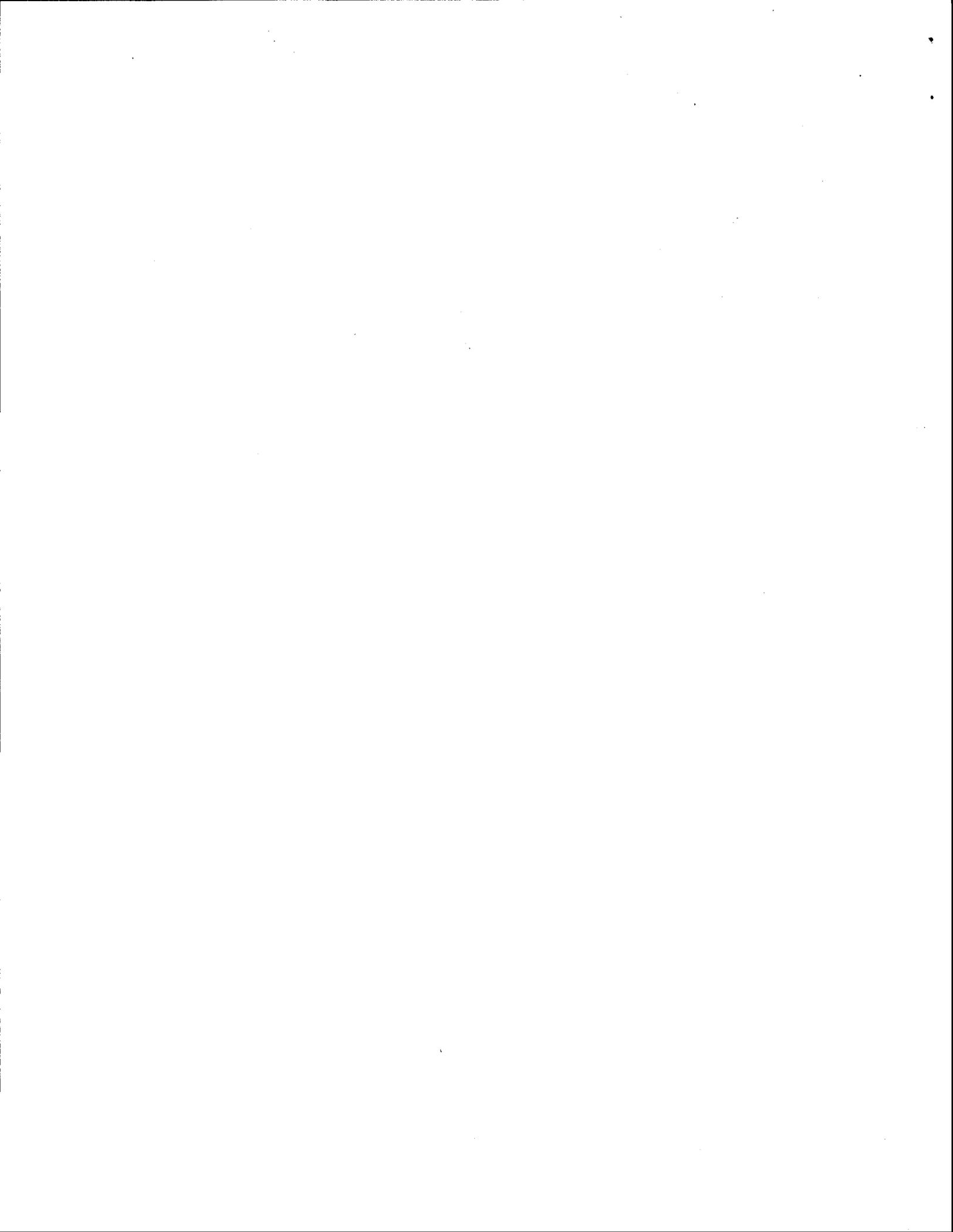


LEGISLATIVE COMMITTEE ON NEW LICENSING BOARDS

SOIL SCIENTISTS



ASSESSMENT REPORT
1995





North Carolina General Assembly

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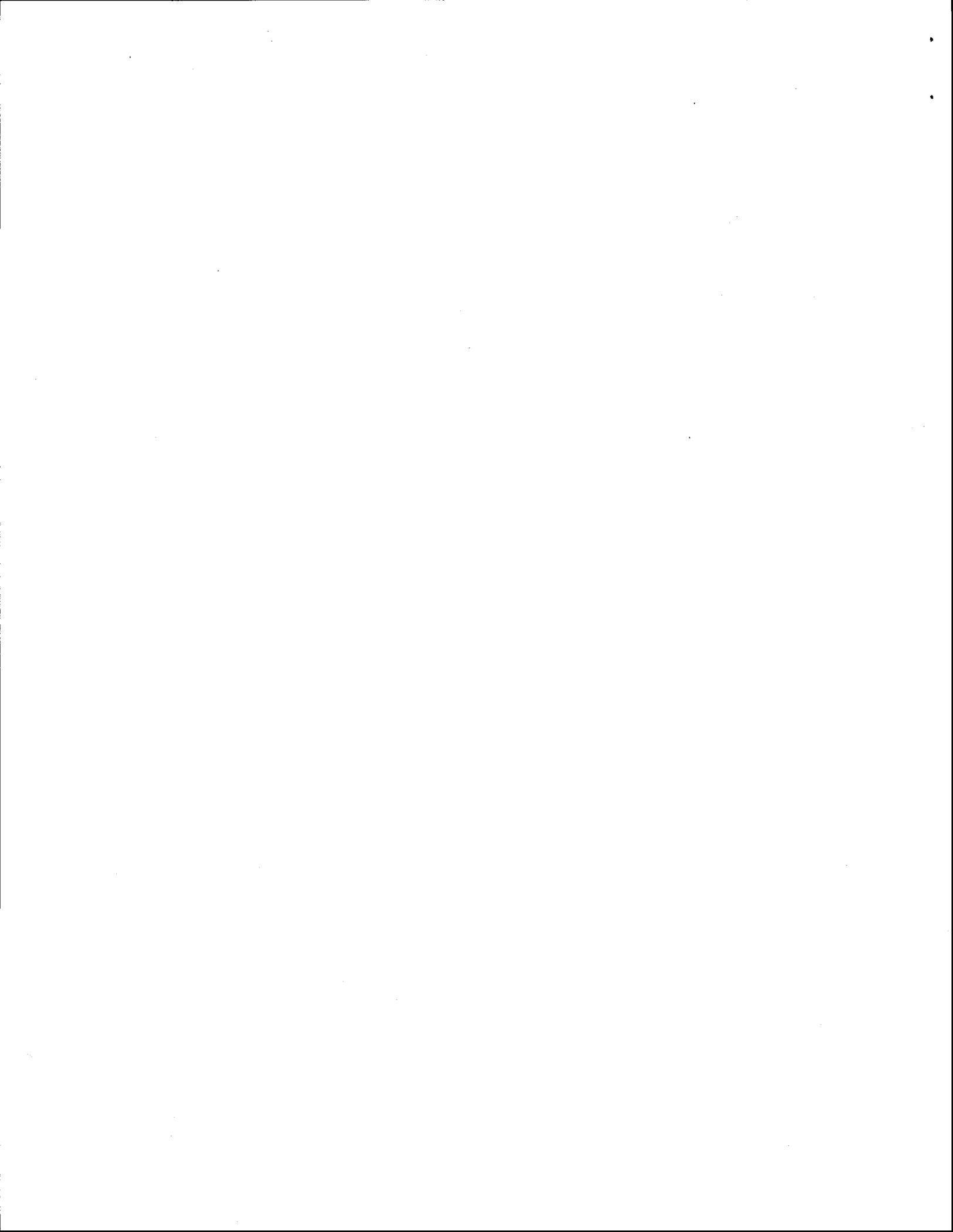
TO THE MEMBERS OF THE GENERAL ASSEMBLY:

Attached for your consideration is the assessment report on the licensing of soil scientists (Senate Bill 837 and House Bill 826). This report serves as both the preliminary and final assessment reports, as required under Article 18A of Chapter 120 of the General Statutes.

Senator David Parnell, Chairman
Legislative Committee on New Licensing Boards

PREPARED BY:
Linwood Jones, Counsel
Legislative Committee on New Licensing Boards





**MEMBERS OF THE LEGISLATIVE COMMITTEE
ON NEW LICENSING BOARDS**

(1995-96)

Senator David Parnell, Chairman

Senator Frank Ballance

Representative Michael Decker

Senator Fred Hobbs

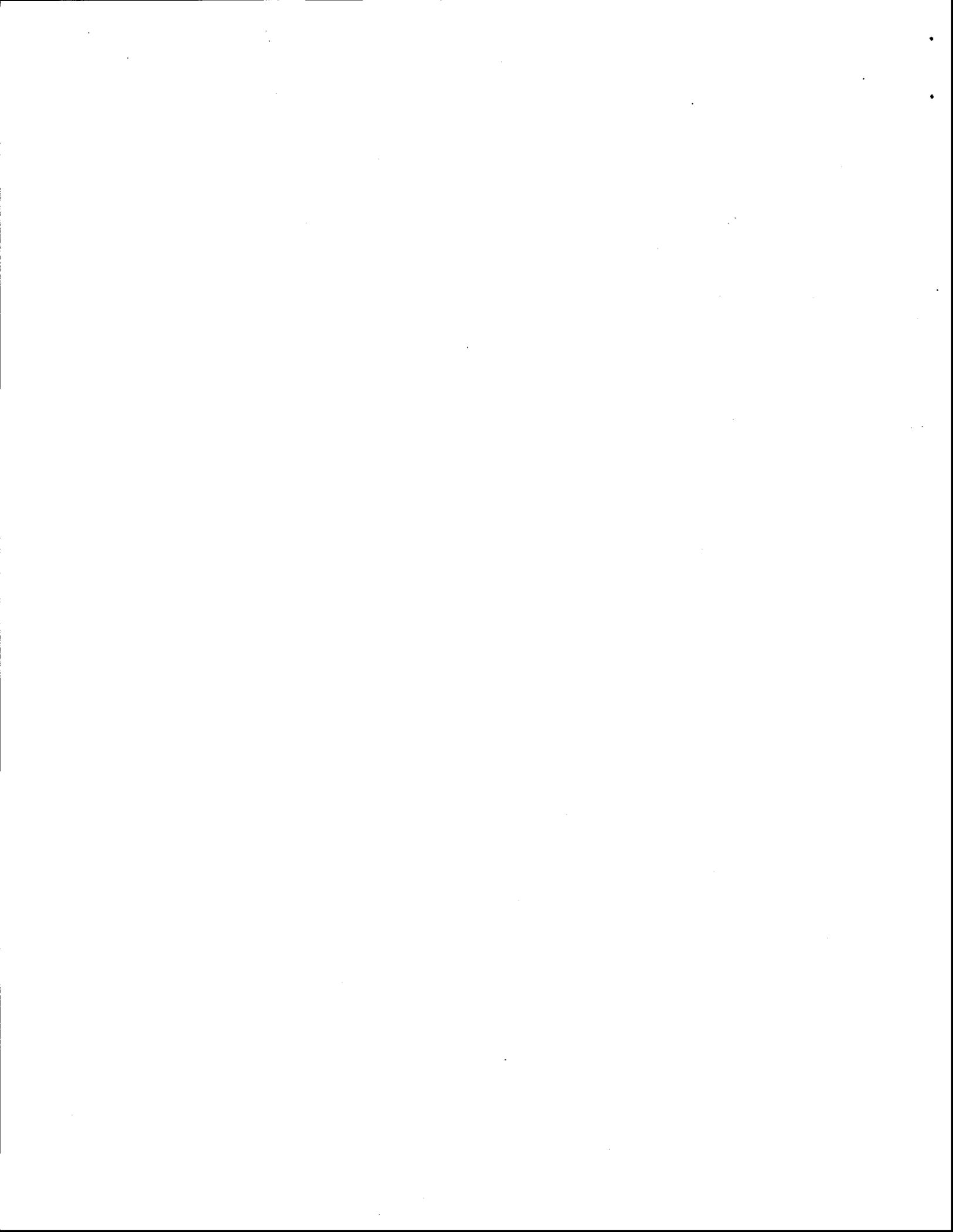
Representative Linwood Mercer

Senator Paul Smith

Representative Frank Mitchell

Senator R.C. Soles

Representative Wilma Sherrill



ASSESSMENT REPORT

Soil scientists are involved with the practice of soil science as an environmental resource. This includes soil characterization, classification, mapping, soil analysis, and related activities concerning the assessment, analysis, modeling, testing, evaluation, remediation, reclamation, and management of soils. There are approximately 200 soil scientists currently voluntarily registered with the North Carolina Registry of Certified Professionals in Soils, but an indeterminate number of other persons are also actively practicing as soil scientists.

There are currently no requirements or qualifications one must meet in order to engage in the practice of soil science. Unqualified persons may create significant problems for landowners, the environment, and the public. For example, a faulty soil analysis for siting ground absorption and sewage treatment and disposal systems increases the potential for the spread of diseases; a malfunctioning system may contaminate water supplies. An improper designation of wetlands because of faulty soil analysis may deprive landowners of the use of their property. Numerous septic systems have failed as a result of faulty soil analyses.

Several other states regulate the practice of soil science. Although North Carolina currently does not regulate the practice of soil science, state environmental regulations and policies require certain environmental reports to be prepared by soil scientists. The State does not specify their qualifications, however. Following the recent failure of the North State Utilities community subsurface wastewater systems, a DEHNR task force

recommended the creation of "a professional licensing program for consulting soil scientists," primarily to ensure that their soil analyses and reports for determining the suitability for siting large land-based wastewater systems are reliable.

The Legislative Committee on New Licensing Boards makes the following findings:

- (1) The unregulated practice of soil science can substantially harm or endanger the public health, safety, or welfare, and the potential for such harm is recognizable and not remote or dependent upon tenuous argument.
- (2) The practice of soil science possesses qualities that distinguish it from ordinary labor.
- (3) The practice soil science requires specialized skill or training.
- (4) A substantial majority of the public does not have the knowledge or experience to evaluate the practitioners' competence.
- (5) The public cannot be effectively protected by other means.
- (6) Licensure would not have a substantial adverse economic impact upon consumers.

The Legislative Committee on New Licensing Boards recommends the licensing of soil scientists.

This assessment report is based on the proposals to license soil scientists, as contained in Senate Bill 837 and House Bill 826, and the questionnaire submitted by the sponsor (attached).

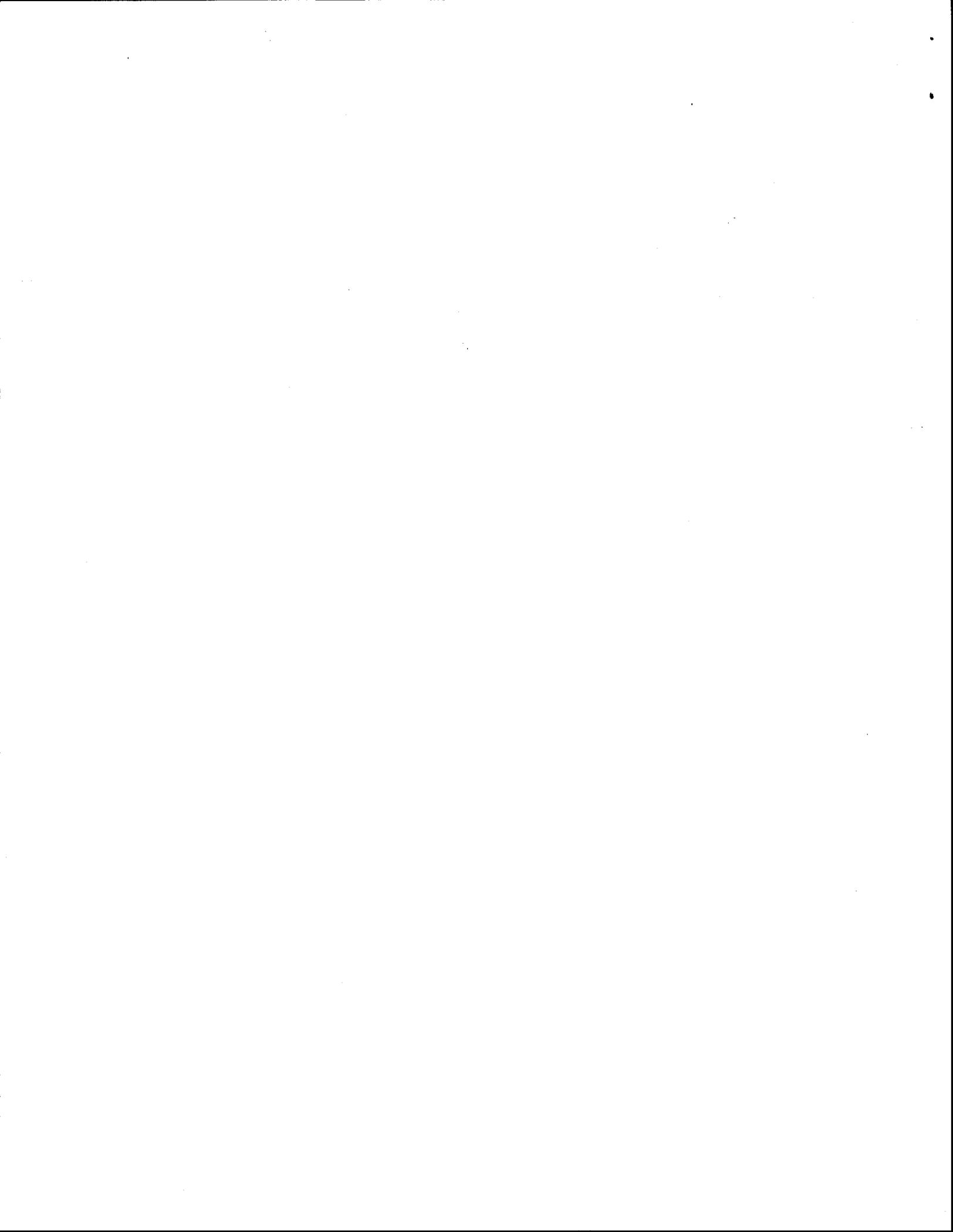
Report to the Legislative Committee on New Licensing Boards

1995 North Carolina General Assembly

An Act to Provide for the Licensing of Soil Scientists

Senate Bill 837 (Senator Speed)

House Bill 826 (Representative Culp)



SOIL SCIENTIST LICENSING ACT

BILL SUMMARY

Bill Number:

Bill Title: Soil Scientist Licensing Act

Bill Sponsor: Rep. Arlie Culp (House)
 Sen. Jim Speed (Senate)

I. History of the Problem

Current state environmental regulations and policies require certain reports to be prepared by soil scientists, yet, there is no clear definition that spells out in detail who is a soil scientist and under what conditions someone is qualified to prepare these required reports. Neither the private sector, *who use* these soil scientist reports as a basis for further work, nor the government officials *who review* the soil scientist reports have a way to judge whether someone is qualified to prepare them. In addition, there is currently no way to hold those preparing the reports accountable for the quality of their work or the reliability of their recommendations.

Numerous incidents where unqualified people prepared erroneous reports, resulting in costly impacts to homeowners, landowners, towns have led to this request for soil scientist licensing.

II. Overview

The proposed Soil Scientist Licensing Act would clearly define who is qualified to perform required soil scientist's work and provide a means for holding them accountable for the quality of their work.

III. Fiscal Impact: No Fiscal Impact

No new regulations are proposed by this bill. As currently designed, the licensing program would be self-supporting, so there would be no financial burden placed on the tax payer. Passage of this act will not increase the general public's cost of obtaining soil scientist information nor will it increase revenues to soil scientists. The Licensing Act is simply a method of insuring that those who prepare required soil scientists' reports are qualified to do so.

IV. Groups That Support the Act

The State Division of Environmental Health and Division of Environmental Management, NC State University Soil Science Department, Soil Science Society of North Carolina, the National Society

of Consulting Soil Scientist, the American Society of Agronomy, the Soil Science Society of America.

We have provided the Farm Bureau, engineers, architects, geologists, foresters, registered land surveyors, and other societies, boards and associations with a copy of the draft bill. Their general support has been expressed. We have incorporated their comments into the bill.

SOIL SCIENTIST LICENSING ACT

ANSWERS PROVIDED TO LICENSING COMMITTEE QUESTIONS

- I. A. In what ways has the marketplace failed to regulate adequately the profession or occupation?

There is no way for the public to identify qualified persons that perform soil science work. Currently in North Carolina, individuals calling themselves "soil scientists" include people with degrees in anthropology, archeology, agricultural engineering, biology, environmental health, as well as soil science or a closely related field. College degrees are not even required for people to advertise themselves as soil scientists. For example, in the Winston-Salem Yellow Pages, one septic tank installer blatantly advertises himself as a soil scientist, while his only qualification is a high school degree.

Other professionals such as engineers, who rely on soil scientist reports for the basis of their design work, have no basis for determining where to obtain reliable information.

- B. Have there been any complaints about the unregulated profession or occupation? Please give specific examples including complainant's names and addresses.

The most recent complaints regarding the unregulated profession come from the widely-publicized problems of the North State Utilities Company. The company was responsible for managing septic systems for ten subdivisions in North Carolina. Most of the systems were not maintained, and forced the landowners to seek other solutions to their waste-disposal problems. As a result of this Company's actions:

1. The NC Department of Environment, Health, and Natural Resources Division of Environmental Health at the direction of the legislature, investigated the incident and in their report recommended that licensing of soil scientists be implemented to lessen the chance that such problems will recur. (See Attachment A "North State Utilities Follow-up: Proposed 1995 Legislation" from the Department of Environment Health and Natural Resources")

2. At least one home owners association sought to file a complaint with the North Carolina Registry of Certified Professionals in Soils. When told that the Registry could revoke certifications, but that this by itself could not stop a person from practicing as a soil scientist, the association felt their complaint would not achieve the solution they sought, which was to prevent certain individuals from staying in business. They did not pursue action, but hoped that licensing for soil scientists would be pursued.

Local Health Departments, the State Divisions of Environmental Health and Environmental Management and the N.C. Registry of Certified Professionals in Soils and their certified professionals routinely receive complaints regarding individuals who use poor practices and/or produce unreliable reports that may impact the public's health, environmental quality or economic well being.

Additional examples are provided in Appendix B.

Contacts on various examples:

STATE CONTACTS

Steve Tedder	Water Quality Section Chief, Division of Environmental Management, DEHNR	733-5083
Karl Shaffer	Division of Environmental Management Soil Scientist (Water Quality Section), DEHNR <i>knows details - Town of Bailey</i>	733-0026
Dennis Ramsey	Assistant Chief for Operations Branch, Water Quality Section, DEHNR	733-5083
Steve Steinbeck	Head of On-Site Wastewater Services, Division of Environmental Health, DEHNR <i>- knows details of North State Utilities</i>	733-2895
Joel Cawthorne	Regional Soil Scientist, DEHNR	(910) 486-1191

LOCAL HEALTH DEPARTMENT CONTACTS

Everette Lynn Wake County Health Department 250-4375
Knows details of North State Utilities

Bill Marlin Mecklenburg County Health (704) 336-5574
Department

N.C. STATE EXTENSION CONTACT

Mike Hoover N.C. State Extension 715-7305
Waste Management

OTHER

Tim Woody, PE Town of Garner 772-7600

II A. In what ways has the public health, safety, or welfare sustained harm or is imminent danger of harm because of the lack of state regulation?

1. Incorrect soil and site evaluation of sites for ground absorption sewage treatment and disposal systems has increased the chances for spread of diseases.
2. Incorrect soil and site evaluations for prospective building sites costs landowners large sums of money when the site is later determined to be unsuitable for the proposed use or worse yet when a failing system prevents the sale or refinancing of a home or business.
3. Incorrect soil and site evaluations cost landowners large sums of money in lost or delayed sales of property.
4. Incorrect designation of wetlands due to misidentification of hydric soils deprives landowners of their rights to use their property for its highest and best use . On the other hand, lack of hydric soils identification can result in destruction of bona fide wetlands.

II B. Please give specific examples including names and addresses.

Many examples are currently in litigation (some between private citizens but some against state and/or local governments). Many involve incorrect evaluations of sites for

septic systems which resulted either in wastewater system failures or persons purchasing building lots that they later discover are not buildable because they are not suitable for septic systems. Some specific examples are listed in Appendix B.

- we would like to add to these examples in a day or two. We are getting permission from private individuals to notify you about their cases.

III

A. Is there potential for substantial harm or danger by the profession or occupation to the public health safety or welfare? How can this potential for substantial harm or danger be recognized?

A. Yes

1. Contamination of water supply (ground and surface) from:
a. Malfunctioning on-site sewage treatment and disposal systems;
b. leaking dumps and landfills, and
c. excessive application rates of sludge on land.

2. Faulty wetlands identification.

3. Poor siting of buildings resulting in:
a. cracked building foundations and walls,
b. flooding,
c. excessive erosion.

B. Has this potential harm or danger to the public been recognized by other states or the federal government through the licensing or certification process? Please list the other states and give the relevant statutory citations.

South Carolina (R 1434 - H 1806)

North Dakota (S.B. 2122)

Arkansas - (Act 460 of 1975)

Alabama - (Act 81-766, S.174)

Virginia (Title 54.1, Chap 1-3, Title 54.1, Chap 22)

New Hampshire

Indiana

Mississippi

Maine

IV. A. What will be the economic advantage of licensing to the public?

Minimizing the chances of obtaining and relying upon inaccurate soils information that could lead to significant environmental impacts and costly correction or clean-up by individuals or towns/cities. Providing an easily accessible avenue for locating qualified professionals to complete required regulatory reports. Providing an avenue for registering complaints against unprofessional behavior.

- B. What will be the economic disadvantages of licensing to the public?

Little to none since there are no new proposed regulations or requirements that would require a licensed person to perform specific work. Rules and Regulations already exist that specify reports by soil scientist.

- C. What will be the economic advantages of licensing to the practitioners?

Many professionals in soils are employed by federal, state, and local government agencies. They work on a set contractual basis and would have no economic advantage. Those employed in the private sector are primarily consultants. Whether or not there is a licensing requirement, they will continue to work under current contractual arrangements. All of these professionals both in the public and private sector approach licensing as a measure to protect the profession from those who do significant harm from poor performance and to protect the public from the resulting costs associated with poor performance.

- D. What will be the economic disadvantages of licensing to the practitioners?

Little to none for the reasons stated in C. The only exception will be the cost of licensure and renewal, however many soil scientists already pay similar fees to voluntary registries which would no longer be necessary after passage of this act.

- E. Please give other potential benefits to the public of licensing that would outweigh the potential harmful effects of licensure such as a decrease in the availability of practitioners and higher cost to the public.

There will be no decrease in the availability of qualified practitioners and no increase in costs to the public solely because of licensing. When work is performed by unqualified persons the costs of their mistakes, are typically more than their fees since entire homes or developments are at risk.

Multi-million dollar decisions are made based on soils evaluations everyday, especially for septic system suitability. Developers, land

owners, home buyers etc. need a reliable accountable resource they can go to for assistance in such important decisions.

- V. A. Please detail the specific specialized skills or training that distinguish the occupation or professional from ordinary labor. How is each justified?

Soil scientists are specially trained to evaluate how suitable an area of land is for virtually any use, including both agricultural and nonagricultural uses. Land evaluation involves identifying the soil characteristics that could limit or prevent landowners from fully utilizing the land for what they intended. For example, homes may not be able to be built on a lot if the soils contain too much expansive clay such that a septic system would not function properly. In other cases, a home cannot be built if the land contains a wetland that would have to be drained or filled in to make room for the home. Other land uses which often require evaluations by soil scientists include: landfill site selection, and disposal of waste products. Soil scientists also evaluate land for agricultural uses including lime and fertility needs, prime farmland determination, highly erodable soils and hydric soils for wetland determinations.

Soil scientists are trained to observe and evaluate soil profiles at specific sites. During their evaluations they look for such things as: indicators of shallow ground water, flooding that has occurred at infrequent intervals, unstable foundation material caused by soil shrinkage and swelling upon wetting and drying, and they also identify naturally occurring layers which will impede the flow of water. Based on these observations and tests of soil physical and chemical properties, the soil is classified according to the system used by the US Department of Agriculture. With this classification, the soil is further evaluated by studying how soils from around the world that have similar classification have performed under the environmental conditions that can be expected at the site.

To adequately assess land for such uses, soil scientists must complete a bachelors of science degree at a four year college or university with a major in soil science, natural resources, or environmental science. This training provides instruction in soil morphology and classification, soil physics, soil chemistry and fertility, soil microbiology, and the principles of land evaluation. Soil morphology and classification enables soil scientists to make and interpret soil maps. These maps summarize soil properties over large land areas and are the basis for land evaluation. Soil

physics deals with the movement of water and chemicals through the soil. The principles of soil physics are used to evaluate soils for waste disposal as well as to determine how soils should be irrigated. Soil chemistry and fertility provide the basic concepts of how fertilizers and lime can best be used to improve crop production. These sciences are also instrumental in providing an understanding as to how chemicals, both toxic substances and plant nutrients, move through the environment. Some soil scientists also specialize in microbiology and use this science to propose methods to remove toxic organic chemicals from the land (a process termed bioremediation).

In summary, soil scientists are trained to compare the physical, chemical, and biological properties of the soils with the specific needs of a particular land use, in order to determine the suitability of the soil for that use.

B. What are other qualities of the profession or occupation that distinguish it from ordinary labor?

Soil scientists are trained to identify how soil properties vary over both small and large land areas such as building lots, counties, or states. For example, the Research Triangle Park (RTP) is built on soils that shrink and swell upon wetting and drying. Homes with basements cannot be built on these soils because the shrinking and swelling of the clays will literally crack the cement walls of any structure placed in or on them. Contractors who have constructed buildings in the RTP now know of the soil problems that occur there, but they do not know from their limited experience how far the problem extends in the State. A soil scientist who understands the geographic distribution of soils would be able to show that the soils in the RTP occur in a belt that runs from southern Granville County to northeast Moore County and also from southern Montgomery through Anson Counties. Not all soils in this belt would have shrink-swell problems but there is a high probability that this problem would occur in this region. A soil scientist would therefore have to make an on-site investigation of each building site in the area to determine if shrink-swell clays would be a problem.

This was just one example showing how a soil scientist can identify potential problems over large land areas. However, critical soil differences are frequently present within a few feet of each other. These are caused by faults, landslides, flood events, or the natural processes that form soils. Precise special identification of such

changes in soil properties, both laterally and with depth, is critical for evaluating potential problems when planning land uses or even constructing waste disposal systems on home sites.

- VI A. Will licensing requirements cover all practicing members of the occupation or profession? If any practitioners of the profession or occupation will be exempt, what is the rationale for the exemption?

It is our intent that all practicing members of the profession be covered. However, other professions exempt government employees so we assume we will be required to do so.

- VIII Does the occupational group have an established code of ethics, a voluntary certification program, or other measures to ensure a minimum quality of service? Please document.

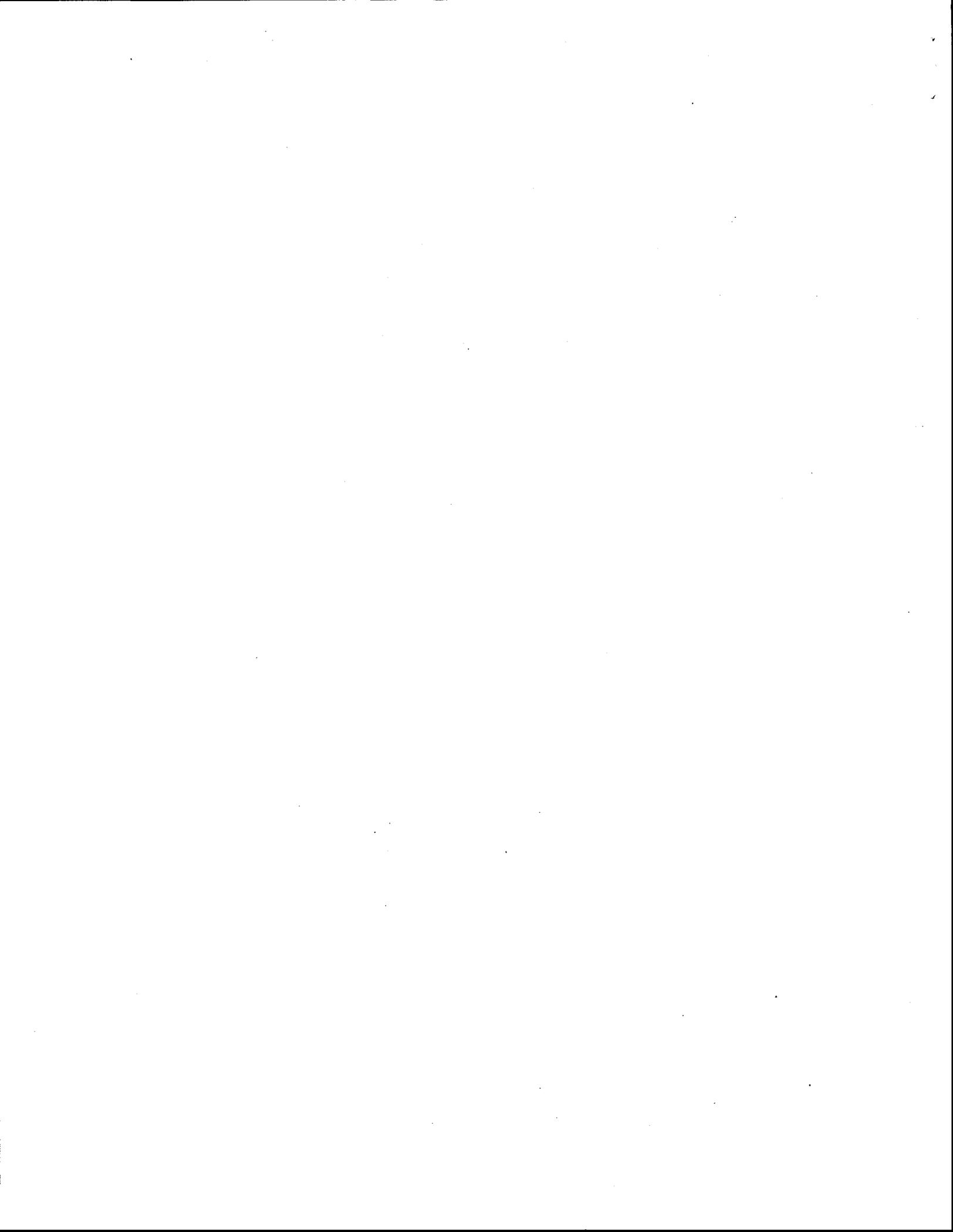
Presently there is a Soil Science Society of North Carolina (SSSNC) which has been in existence for approximately 37 years. The North Carolina Registry of Certified Professionals in Soils (NCRCPs) was a division which was started in 1979 as a part of the SSSNC and which became a separate entity in 1992. The registry has its own established by-laws and requirements for certification. To become certified, an applicant must sign a code of ethics, meet a minimum educational requirement which includes at least a Bachelor of Science degree with 15 semester hours of soil science and 30 semester hours of natural resources, meet a minimum work experience of four years upon completion of have four letters of recommendation of which at least one must be from a certified soil scientist, and one must be from a member of the Soil Science Society of North Carolina. An application package is available upon request. The application is submitted to the N.C. Board of Certification of Professional Soil Scientists who act upon it during regularly scheduled meetings. A Directory of certified soil scientists is issued which lists members and provides a section which lists those certified soil scientists who are available as consultants.

- IX. Please cite and document the extent to which any other licensing board in North Carolina regulates similar or parallel functions to the profession or occupation.

No other boards regulate the practice of soil science. However, similarities and parallels do exist with two existing boards, those governing professional engineers and professional geologists. Soil scientists work with these professionals on some projects. For example, Engineers (PE's) design on-site wastewater treatment systems for land that soil scientists have evaluated. Soil scientists identify potential hazards and engineers design systems to overcome them.

Soil scientists and geologists both evaluate materials for movement of water and pollutants, but their spheres of interest are different. Geologists focus on phenomena related to rocks and deep ground water. Training of soil scientists and geologists overlap to some degree, but the two are clearly separate professions and require different courses of study at all universities that offer training in both specialties. The NC Licensing Act for Geologists specifically excludes them from practicing soil science.

Because soil scientist are more likely to work in conjunction with geologists and engineers, rather than compete with them, we plan to clearly exclude the practices of geology and engineering in our licensing act.



NORTH STATE UTILITIES FOLLOW-UP PROPOSED 1995 LEGISLATION

Background

North State Utilities, Inc. owns and operates 10 community subsurface wastewater systems in Wake, Orange, Durham and Mecklenburg Counties. The company petitioned the North Carolina Utilities Commission to abandon service to all of these systems in June, 1993, and stopped providing any maintenance whatsoever in July, 1993. Their request for abandonment was denied by the Commission, and emergency operators were appointed, effective September 1, 1993. During the fall of 1993, these systems were inspected in detail by county and state public health officials and found to all be in need of substantial repairs and modifications, and in many cases were determined to be severely malfunctioning, with septic tank effluent breaking out onto the ground surface.

The emergency operators have made recommendations to the Utilities Commission and public hearings have been held. Yet, as of September 1, 1994—one year after the emergency operators were appointed--no major repairs have yet been authorized by the commission.

Secretary Howes appointed two committees to investigate the failure of the North State Utilities systems—an investigative committee charged with determining how the Department can prevent the same situation from happening again; and a solutions and management team, charged with assessing funding options and management solutions available to property owners in the 10 affected subdivisions. The final reports prepared by these committees include a number of recommendations which would require legislative action during the 1995 Session of the General Assembly (copies of their recommendations attached). These include work on statutes affecting DEH authority, as well as statutes affecting DEM, Public Utilities, consultant and contractor licensing, and land transactions. Listed below are a summary of initiatives recommended by these committees, and related initiatives believed to be necessary to implement.

A task force should be immediately appointed, including DEH, DEM, Utilities Commission, Attorney General's Office, and possibly other (eg: Institute of Government) representatives to research and draft the necessary law changes.

Summary of Proposed Legislation

1. Require assessment of utility company's financial viability prior to both utility approval and new wastewater (and water) system approval, expansion or renewal of existing utilities or wastewater (and water) system permits.
2. Upgrade bonding requirements for all new wastewater (and water) systems, and require the establishment of contingency funds to generate repair capital for all new and existing wastewater (and water) systems.
3. In conjunction with improvements to assure utility financial viability and the generation of necessary capital reserves, require all privately owned wastewater (and water) systems serving multiple residential or commercial users to be owned and operated as public utilities.

To: <i>Kevin Martin</i>	From: <i>Wayne Martin</i>
Ca:	Ca:
Dept: <i>846.5900</i>	Phone #: <i>715 3274</i>
Fax #: <i>846.9407</i>	Fax #: <i>715 3227</i>

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RECOMMENDATION #1

Establish a professional licensing program for consulting soil scientists to assure adequate reliance can be placed on their on-site investigations which form the basis for determining site suitability for large land-based wastewater systems.

I. History of Problem(s)

For land-based wastewater systems, it is essential that a comprehensive soil/site evaluation be conducted prior to site approval and system design. The NC Registry of Certified Professionals in Soils is a volunteer organization and these soil professionals are initiating an effort to certify or license their members. It is anticipated that the Soil Professionals will submit legislation for the 1995 session. DEH supports this effort.

The only registered professionals currently involved with the design of large land-based systems are professional engineers and in some cases professional geologists. For large land-based systems, design success or failure is critically dependent on the quality of the soil/site evaluation, which is best performed by a soil scientist. By requiring registration, the quality of soil work would be upgraded and accountability for system performance can be properly allocated to a responsible professional.

II. Overview of What Proposed Legislation Would Be

This legislation would require mandatory registration of soil professionals and provide a system of quality assurance which would help land-based wastewater disposal. This licensing would not allow these soil professionals to practice geology or engineering as defined by statute. Would apply to soil disciplines only.

III. Fiscal Impact of Legislation

This legislation would have no significant impact.

IV. Groups That May Support or Oppose Such Actions

This action would be supported by numerous public health and environmental groups. Some opposition is expected from geology and engineering professionals, although most favor if it will help diffuse some of their liability.

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To: <i>Sandra Long</i>	From: <i>Kevin Martin</i>
Ca:	Ca:
Dept:	Phone #
Fax #: <i>467 4611</i>	Fax #

APPENDIX B

Situations in which the misuse of soils information, or lack of use of soils information, has caused economic and/or environmental harm:

1. Town of Bailey wastewater spray irrigation is a soil-based waste treatment system. The site was liberally designed at an application rate which exceeded the soil's ability to retain and treat the wastewater. Inadequate testing or improper site evaluations led to this design. Although there may have been an initial cost savings to the Town with land acquisition, the result now is that expansion is required. The costs of condemnation, legal and recording fees, etc. must be realized again. With respect to engineering and construction, the additions will incrementally cost more than if it were done originally and properly sized. The system has been cited a number of times for inadequate treatment of wastes, resulting in illegal discharges of wastewater to waters of the state and downstream negative impacts. The potential for health implications is high, as a downstream user of this water body is a Boy Scout camp. Future water quality implications will result unless the system is expanded or upgraded with process design units.
2. Town of Garner has had similar experiences with the same type of waste system. The system was designed to treat 1.54 million gallons per day. It has proven that 1.0 to 1.1 MGD is the maximum capacity of the site. Soils information in the design stage was based on one type of soil, while the 300 acre site actually has over 10 soil types, each with specific characteristics and waste treatment capacities. The result is that the Town has had to purchase "capacity" from the City of Raleigh POTW for waste treatment of a portion of their wastestream. Of course, there is a surcharge from Raleigh for this treatment capacity.

In general, there are many situations where property has been purchased with an understanding (or possibly not) that it is suitable for a given intended use; only to find out that the intended use is not permissible due to regulations concerning soil capabilities. With respect to individual property owners for residence, this may result in an on-site waste system that is \$2000 to \$6000 MORE than was expected. In other instances, individuals claiming to possess a knowledge of soils will give incorrect information, with the same end result. The result to the public is that

property values, time, and money are lost because proper soils information was not available.

Another scenario as touched on above, is where waste treatment systems are over designed due to improper use of soils information, or due to an inadequate site evaluation. Not only does the end result cost the town or industry dollars, there is serious threat for contamination of surface waters, groundwaters, and the soil itself can be rendered "sterile". This cost ultimately usually gets born by the taxpayer if a municipality, and likely by a taxpayer for industry if government monies (Superfund, groundwater, etc. funds) are utilized for cleanups.

APPENDIX B Continued

To whom it may concern:

The following situations are some of the instances that I have been alerted to from some of the clients that I deal with on a regular basis. These actions have been reported to me concerning soils work as to its pertinence to the citing of waste disposal systems.

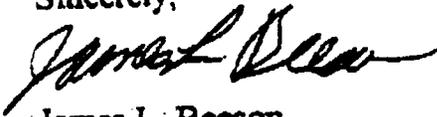
In December of 1993 I evaluated a tract of land for Mr. Bill Gardener, of Oak Ridge, North Carolina. The results of my soils evaluation were used by Mr. Gardener's engineer to construct lots on the tract. The tract yielded approximately 70 lots. Within three weeks I was contacted by Mr. Mack Peoples of Oak Ridge, who had concerns as to the validity of my evaluation. Upon further discussion Mr. Peoples stated that he had a soils map of the same tract that conveyed that approximately 85% of the area was unusable. When I asked if the person performing the evaluation for him was certified by the North Carolina Registry of Certified Professionals in Soils he replied that he did not know. Mr. Peoples further explained that this incorrect soils information had lead him to decide not to buy the tract, if he had developed the tract he expected to more than double his original investment. He also voiced his wishes that the person who performed his evaluation could be held liable for misrepresenting himself as a soil scientist.

In the spring of 1994 I evaluated a tract for two women in south east Guilford county. They had inherited the family farm and were dividing among their children. A consultant in the area evaluated the tract and did not find an area that could be used for waste disposal. I was hired by one of the women, Mrs. Gladys Teague of Raleigh, I found two site's on the area and had them accepted by the Health Department. The first consultant offered the client a map on the back of an envelope describing his findings as including "Bituminous Clay". This term is used to describe coal and is found nowhere in the soil science field. This consultant had no education in soils but offers himself as a soil consultant.

I have been exposed to numerous accounts as to soils consultants in the central piedmont using tree type or topsoil color as indicators of suitability for waste disposal. This in my opinion was no more evident than in an account relayed to me by Dr. French Wise of Guilford County who had purposely avoided a parcel of property that he had encircled with a development. Dr. Wise had me look at the thirty acres which ultimately resulted in the local health department issuing 28 permits for the installation of conventional systems. When I later questioned Dr. wise as to why he thought this area was previously unusable he explained that his soils consultant that he used prior to enlisting my services had pointed out to him that this area contained a certain type of plant, which turns out to be an upland plant. But due to its presence the consultant only examined two holes on the tract and conveyed to Dr. Wise that the tract was unusable.

I have listed below the numbers of the clients that I have mentioned above. I have not asked them to come forward and they are unaware that I have mentioned them as examples but I feel certain that they would cooperate with any persons trying to assure some minimum standard to the field of consulting soil science. If you have any further questions please feel free to call.

Sincerely,



James L. Beeson

Mr. Mack Peoples 910-643-7741
Dr. French Wise 910-288-4881
Mrs. Gladys Teague 919-782-6693

Barnett Kays & Associates, P.A.**Selected Soil Scientist Project Contact List****1. Capacity Analysis for Municipal Spray Irrigation Facility, Town of Garner**

BKA conducted a soil study and capacity analysis for Garner and found that the sites capacity was only 13% of the design capacity. BKA made recommendations to achieve up to 49%. The previous consultant had seriously erred in its soil evaluation of the site costing Garner a significant amount of the facility's capacity.

Contact Persons:

Mr. Ron Horton, Director of Public Utilities (919) 772-7600
Mr. Tim Woody, Spray Irrigation Specialist (919) 662-5024
Mr. Frank Powell, Town Engineer (919) 772-4688

2. Soils Evaluation of Subdivisions by Durham County & Alexander County Health Departments

BKA conducted soil evaluations and served as expert witness for plaintiffs in Durham and Alexander Counties. The soil evaluations by the counties were provided as non-mandated services. Both cases resulted in settlement or judgment of substantial monies for the plaintiffs due to the improper soil work by the agency. The latter case is up for appeal before N.C. Supreme Court.

Contact Person:

Mr. Mike Brough (919) 929-3905

3. Soils Evaluation for Piney Mountain Subdivision, Piney Mountain Home Owners Association, Orange County

BKA conducted a soils evaluation of the Piney Mountain wastewater system after Northstate Utilities failed to continue to provide service. BKA also served as expert witness for the plaintiffs in several cases due to faulty soils evaluation that were subsequently settled.

Contact Person:

Ms. Nancy Essex (919) 783-6400

4. Wetlands Evaluation for Broadreach Development Corporation, Wake County

BKA conducted a detailed wetland evaluation for a large tract subsequently purchased by Sandoz Corporation. The previous consultants work had seriously erred in the wetland delineation which nearly led to the State losing a significant economic development project.

Contact Persons:**Mr. Steve Stroud (919) 832-0594****Mr. Charles Case (919) 899-3045****5. Wetlands Evaluation for ParkEast, Wayne County EDC**

BKA conducted a detailed wetland evaluation for ParkEast a Wayne County Economic Development Commission industrial park. BKA's work was instrumental in preserving Wayne County's investment in this project.

Contact Person:**Mr. John Howard (919) 731-7700****6. Soil and system evaluation for Vance and Brassfield Elementary School Wastewater Systems, Wake County Public School System**

BKA conducted an evaluation of two low pressure systems that had been installed for two new schools and had failed in the first year. Both systems had serious soils, design, and construction problems that caused failure. BKA's work has led to correction of these problems.

Contact Persons:**Mr. Howard Fisher (919) 469-4043****Mr. Riley Reiner (919) 856-8005**

